

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	:
	: Confirmation No.: 5127
MUMPER ET AL.	:
	: Group Art Unit: 1618
Serial No.: 10/072,320	:
	: Examiner: Rogers, James W.
Filed: Feb. 7, 2002	:

For: Ph-SENSITIVE MUCOADHESIVE FILM-FORMING GELS AND WAX-FILM
COMPOSITES SUITABLE FOR TOPICAL AND MUCOSAL DELIVERY OF MOLECULES

REPLY BRIEF

Dear Sir:

This Reply Brief follows the Examiner's Answer mailed July 5, 2011, and is therefore timely. With regard to the Examiner's rejection of: 1) independent claims 33-34, 42-46, 56-57, 65 and 67 under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 6,270,783 to Slavtcheff et al. ("Slavtcheff") in view of U.S. Patent No. 4,715,369 to Suzuki et al. ("Suzuki"); 2) claims 33, 34, 42-46, 51, 56, 57 and 63-68 over Slavtcheff in view of Suzuki in view of U.S. Patent No. 6,562,363 to Mantelle et al. ("Mantelle"); and 3) claims 33-34, 36-46, 56-57 and 63-67 over Mantelle in view of Suzuki, the Examiner essentially repeats the arguments from the Final Office Action mailed on January 11, 2011, to which Appellant's Appeal Brief filed May 16, 2011 was fully responsive. Nevertheless, Appellant believes it is necessary to clarify a few arguments that the Examiner makes in response to Appellant's Brief, and to address new arguments and citations of art previously not relied on by the Examiner.

To begin, the Examiner contends (*Examiner's Answer, pg 9, final partial ¶*) that the Appellant's argument is rebuttable as merely recognizing an advantage "... which would flow naturally from following the suggestion of the prior art ..." and goes on (*Examiner's Answer, pg 10, first partial ¶*) to state that Carbomer was previously claimed ... as a water-insoluble swellable anionic mucoadhesive polymer. A like argument is set forth in support of the rejections over Mantelle and Suzuki (*Examiner's Answer, pg 15, final ¶ bridging to pg. 16*), wherein the Examiner

states that Mantelle teaches bioadhesives including Noveon polycarbophils and also Eudragits. From this, the Examiner concludes that "Slavtcheff clearly teaches an adhesive composition containing anionic film forming polymers and Carbomer structuring agents ... since the ingredients are the same they will have the same properties and effects when used in the same way, in this instance, as an adhesive" (*Examiner's Answer*, pg 10, first partial ¶) and that Mantelle "... clearly teaches the same mucoadhesive layer claimed, including the same 1) anionic mucoadhesive polymer and 2) anionic film forming copolymer. The ingredients are the same, therefore any property claimed will be the same since the same composition will have the same properties including the pH sensitivity and water solubility/swellability" (*Examiner's Answer*, pg 15, final ¶ bridging to pg. 16).

Contra, while Slavtcheff and Mantelle may list compositions which can be anionic and/or pH-sensitive, nowhere does the reference in any way suggest that an anionic, pH-sensitive composition is contemplated for the invention taught by the reference. Thus, the Examiner again attempts to use trade names (which as has repeatedly been stated by the Appellant during prosecution of this application may be associated with a variety of compositions which though similar in ingredients may provide very distinct chemical properties) and lengthy recitations of known ingredients to distract from the true issue. The Appellant does not challenge the Examiner's assertion that "Products of identical chemical composition cannot have mutually exclusive properties" (*Examiner's Answer*, pg 16, first partial ¶). Rather, the Appellant challenges the Examiner's assertion that a suitable objective rationale for combining any teachings of the references to arrive at the Appellant's claimed subject matter has been provided. Indeed, the rationale for combining particular compositions taught by Slavtcheff and/or Mantelle appears to have been abstracted from the Appellant's own disclosure, which is clearly improper.

As is well known, simply identifying each claim limitation in the prior art is insufficient (*See* Memorandum of Margaret A. Focarino, Deputy Commissioner for Patent Operations, May 3, 2007 ["in formulating a rejection under 35 U.S.C. 103(a) based upon a combination of prior art elements, **it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed** . . . "] (emphasis added)), and current Supreme Court precedent recognizes that the ability to "merely demonstrat[e] that each of its

elements was, independently, known in the prior art" is insufficient to establish obviousness (*See KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007) (holding that obviousness cannot be proven **"merely by demonstrating that each of its elements was, independently, known in the prior art. . . ."**) (emphasis added).). Rather, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements," (*Id.* at 418) and a proper "reason" must also have a rational underpinning, which must be articulated in the record (*Id.*, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness"). Despite the lengthy recitation in at least Slavtcheff and Mantelle of various ingredients related to and in some examples the same as those of the Appellant's claimed subject matter, the Examiner has simply failed to meet his burden of pointing to a reason supported by a rational underpinning leading the skilled artisan to combine any teachings of the references to arrive at the Appellant's precisely claimed subject matter. Rather, the Examiner merely relies on random selection of known compositions from various references to support a finding of obviousness.

The Appellants have never suggested that the Examiner-cited art does not teach adhesives, even mucoadhesives, or that related ingredients may be recited in the references relied on by the Examiner. However, a recitation of a trade name as relied on by the Examiner is simply not the same as a recitation of specific ingredients and a teaching leading the skilled artisan to contemplate combining teachings to arrive at the Appellant's claimed subject matter. The Appellant's argument lies in the fact that Slavtcheff and the other cited art, while teaching trade names for compositions which may also be adhesives, in no way teaches or suggests the particular compositions having the particular properties set forth in the claims under consideration, that is, the bi-layer wax film composites comprising a pH sensitive mucoadhesive layer including: 1) at least one one water-insoluble swellable anionic mucoadhesive polymer and 2) at least one anionic pH-sensitive film-forming copolymer of methacrylic acid and acrylic or methacrylic ester, and a water-insoluble pharmaceutical wax layer bonded to the pH-sensitive mucoadhesive layer, for delivering a molecule

of interest to a wet mucosal surface.

Stated differently, the question posed to the Board is not whether the teachings of the Examiner-cited art combination render obvious an adhesive, but whether the Examiner-cited art renders obvious a mucoadhesive composition having the specific charge/pH-sensitive properties claimed by the Appellant, for the advantages recited in the Appellant's specification. As has been repeatedly stated by the Appellants, for example in the discussions with the Examiner regarding Eudragit polymers (Appellant's Response filed on Feb. 8, 2010 and Exhibit 1 appended thereto, see also Appellant's Appeal Brief, *pg 30*), the same trade name is often applied to a range of polymers having different molecular weights, charges, etc. Thus, the Examiner's reliance on case law standing for the proposition that "... if the prior art teaches the identical chemical structure or composition as that which is claimed, the properties appellant discloses and/or claims are necessarily present" is simply a red herring, because the art does not expressly "disclose the identical chemical structure or composition" as set forth in the Appellant's claims. Rather, the art discloses known trade names applied to certain of the compositions employed by the Appellants, but gives no inkling or rationale leading the skilled artisan to contemplate particular combinations to arrive at the Appellant's anionic, pH-sensitive mucoadhesive polymers. The present obviousness rejections therefore appear to flow from the Examiner's use of teachings of the Appellant's disclosure, rather than from the teachings of the references.

In turn, to the extent that the Examiner's reliance on case law standing for the proposition that "... if the prior art teaches the identical chemical structure or composition as that which is claimed, the properties appellant discloses and/or claims are necessarily present" (*Examiner's Answer, pg 10, first ¶*) is a back-handed finding of obviousness based on inherency, this is similarly misplaced. To properly rely on inherency, the Examiner "must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Manual of Patent Examining Procedure (MPEP) §2112 (quoting Ex parte Levy, 17 USPQ2d, 1461, 1465 (BPAI 1990))* (emphasis in original). Further, "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it

would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *MPEP §2112 (quoting In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Here, no basis in fact or reasoning, beyond a reliance on like trade names, supports the conclusion that the allegedly inherent characteristic necessarily flows from the teachings of the references. Rather, the Examiner simply relies on the flawed reasoning that “if the trade name is taught in the reference, the compositions resulting must necessarily have the same properties” despite having been presented with evidence (Response filed Feb. 8, 2010 and Exhibit 1 thereto) conclusively showing that similar compositions bearing similar trade names may have distinct chemical properties. This is reliance on probabilities and possibilities, not on any basis in fact and/or technical reasoning reasonably supporting the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

It is noted also that the Examiner relies on previously uncited art (*Examiner's Answer*, pg 12, *final partial ¶*), citing to U.S. Patent No. 5,877,131 to Barnes (“Barnes”) and U.S. Patent No. 6,265,346 to Reeves (“Reeves”) in support of the proposition that beeswax, cited in Suzuki as useful for a backing layer in its invention (Suzuki *Col. 6, line 3*), can be translucent. This is apparently in rebuttal to the Appellant's argument that applying a nonadhesive layer of beeswax according to Suzuki would occlude the thermochromic substance of Slavtcheff, rendering the Slavtcheff cosmetic strip unsuitable for its intended purpose. The Appellant was not previously provided an opportunity to consider this art and argument, and so wishes to briefly address them. First, the Examiner states that the Slavtcheff cosmetic strip “... uses a water insoluble flexible substrate with the adhesive dispersed or impregnated unto [sic] the substrate. The substrate material included natural and synthetic materials, which are not translucent ...” (*Examiner's Answer*, pg 12, *third ¶*). Again, this appears to be merely an attempt to distract from the Appellant's argument, which is that if the thermochromic substance of Slavtcheff's cosmetic strip is occluded from view, such as by a beeswax backing according to Suzuki, the cosmetic strip cannot serve its recited purpose of providing a visual cue to the user that the strip is sufficiently dry (Slavtcheff *Col. 1, ll 10-12*). Moreover, Slavtcheff itself addresses this issue, stating that the adhesive composition is deposited onto the substrate

(Slavtcheff *Col. 2, ll 10-21*). While Slavtcheff also teaches that the thermochromic substance may be incorporated into one or both of the substrate or adhesive (*Id.*), this in no way represents a teaching of occluding the thermochromic substance from the view of a user.

In turn, while Suzuki does teach a nonadhesive component which may include beeswax, neither reference relied on by the Examiner teaches or suggests that beeswax alone is translucent. Barnes teaches a translucent lubricant comprising aliphatic or aromatic resins which may include beeswax (*Col. 2, ll 27-37*), but in no way teaches or suggests that beeswax itself is translucent. Rather, Barnes teaches only (*Col. 2, ll 27-37*) a lubricant comprising 40 to 80 weight percent of an aliphatic or aromatic resin (including beeswax, *see also Barnes claim 2*) and an oil or synthetic fluid, with a preferred ratio of aliphatic or aromatic resin: oil of 2:1. Accordingly, *contra* the Examiner's statement, Barnes does not teach that beeswax itself is translucent. For any teaching or suggestion provided by Barnes, any translucent property of beeswax as used in its lubricant composition could be a result of dilution or of a chemical reaction with other ingredients of the composition. Likewise, Reeves teaches that its beeswax is an artist's grade beeswax that is "a creamy white" (Reeves *Col. 3, line 4-5*), and further teaches inclusion of a dye in the beeswax to prevent formation of a "white coating" or an "unnatural waxy coating" over a flower dipped therein (Reeves *Col. 3, ll 8-18*). The dye is intended to match the color of a flower dipped in the beeswax according to Reeves to preserve as natural an appearance as possible (*Id.*). This appears to cut against the Examiner's suggestion that Reeves teaches that beeswax itself is translucent. For any teaching or suggestion provided by Reeves, it is the combination of dye and beeswax and/or the method of application and curing (Reeves *Col. 2, ll 40-57; Col. 3, ll 26-51*) that provides the translucent property, not the beeswax itself. Accordingly, neither reference relied on by the Examiner teaches that beeswax alone is translucent, and indeed Reeves appears to suggest otherwise. Certainly, neither reference provides substantial evidence supporting the Examiner's conclusion of translucency of beeswax.

Regardless, even if the Examiner is correct that beeswax according to Suzuki's nonadherent layer is or can be made translucent and would not occlude the user's view of Slavtcheff's cosmetic strip including a thermochromic substance, this still does not alter the argument as set forth in detail in the Appellant's Appeal Brief (*pg 19*) that nowhere does Slavtcheff teach or hint at combining

compositions to provide a pH-sensitive anionic mucoadhesive polymer for delivery of a molecule of interest as is expressly claimed by the Appellants. Instead, Slavtcheff teaches only a temperature-sensitive dermo-adhesive layer comprising liquid crystal thermochromic substances (*Col. 2, ll 25-65*) wherein an induced temperature change of at least 2 ° C (*Col. 2, ll 15-17*) causes the thermochromic substances to change color to provide a visual indicator to the consumer. There is simply no indication in Slavtcheff of any need or reason for pH-sensitivity and/or anionic charge, and further no indication that any contemplated composition is capable of delivering a molecule of interest to mucosa, which is unsurprising since the Slavtcheff strip is only intended for removing keratotic plugs from skin pores. In turn, Suzuki teaches a composition "consisting essentially of" a cellulose lower alkyl ether and a polyacrylic acid or pharmaceutically acceptable salt thereof (*Suzuki Abstract*) and in so doing expressly excludes the presently claimed pH-sensitive mucoadhesive polymers (Appellant's Appeal Brief, *pg 20*). Moreover, as set forth in the Appellants response to the Office Action mailed on October 9, 2009 (Response dated Feb. 8, 2010, *pp. 10-11*), Suzuki expressly teaches against inclusion of medicaments (*Suzuki Col. 2, ll 4-11*). Thus, no combination of the references provides the required objective reason supported by substantial evidence to combine any teachings thereof.

Finally, the Examiner again argues that Mantelle's teaching of PVP, a neutral polymer, can be safely ignored because "[C]learly PVP would not materially affect the basic and novel characteristic(s) of the claimed invention drawn to an adhesive since Mantelle uses this ingredient and the composition functions as an adhesive" (*Examiner's Answer, pg 17, final ¶*). Again, this simply distracts from the true issue. The Appellants have never argued against any adhesive properties of the compositions taught by the Examiner-cited art. Rather, the Appellants have consistently argued that no combination of the cited art teaches or suggests the claimed subject matter, that is, bi-layer wax film composites comprising a pH sensitive mucoadhesive layer including: 1) at least one one water-insoluble swellable anionic mucoadhesive polymer and 2) at least one anionic pH-sensitive film-forming copolymer of methacrylic acid and acrylic or methacrylic ester, and a water-insoluble pharmaceutical wax layer bonded to the pH-sensitive mucoadhesive layer, all for delivering a molecule of interest to a wet mucosal surface. The

Examiner points to no evidence of record, much less anything meeting the "substantial evidence" standard required for Office findings of fact (Appellant's Appeal Brief, *pg 16, at top*), that PVP as taught by Mantelle would not alter the basic and novel characteristics of the Appellant's claimed subject matter, that is, the anionic properties and the pH-sensitive properties as expressly and precisely claimed. Rather, only an unsupported conclusion is set forth. Even more, the Examiner's statement is factually incorrect as to at least the Appellant's claims 66 and 67, since by the recitation of "consisting essentially of" and "consisting of" neutral compositions such as taught by Mantelle are expressly excluded.

Upon careful review of the cited references and the comments made in Appellant's Appeal Brief and this Reply Brief, it is believed that the Board will agree that all of the presently pending claims should be allowed. Accordingly, it is respectfully requested that the rejections of the Examiner be reversed and the present application be remanded for allowance. Although Applicant believes that no fees are due, the undersigned authorizes the deduction of any necessary fees from **Deposit Account 11-0978**. Lastly, the Appellant submits this Reply Brief complies completely with 37 C.F.R. §41.41. Among other things, no new or non-admitted amendments, affidavits, or new matter of any sort are submitted and the Reply Brief is timely filed within two months from the date of the Examiner's Answer.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "P. Torre", is written over the printed name of Patrick M. Torre.

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